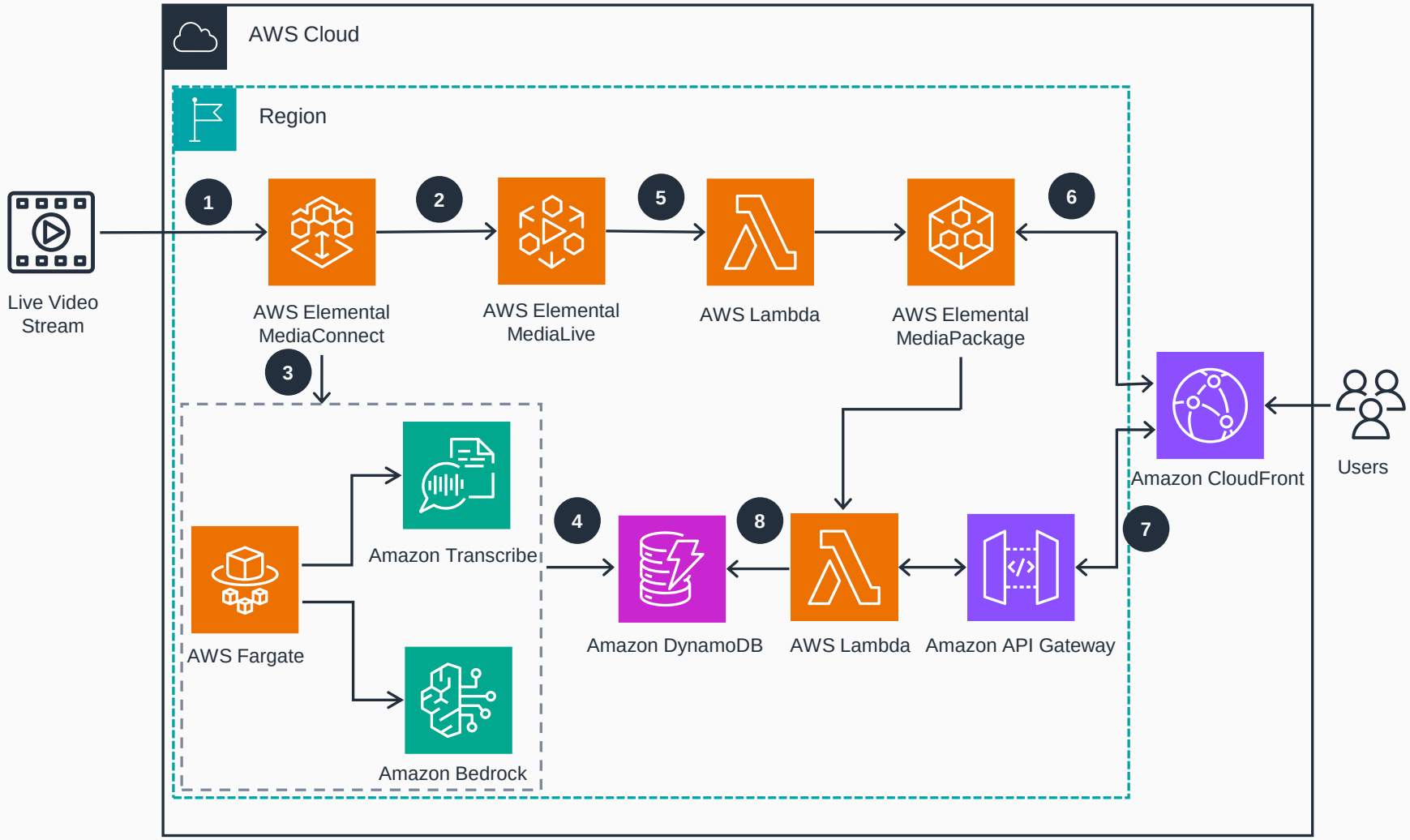
# Guidance for Real-Time Multilingual Subtitling for Live Video on AWS

This architecture diagram illustrates how auto multilingual subtitles for live video streams can be generated in near real-time on AWS.




1. A Live Stream is pushed to **AWS Elemental MediaConnect** from the source.
2. One output from **AWS Elemental MediaConnect** is pushed to **AWS Elemental MediaLive** for stream transcoding into an Adaptive Bitrate (ABR) stream.
3. Another output is pushed for transcription to **Amazon Transcribe** and then further translated using **Amazon Bedrock** and **Amazon Nova** Foundation Models, which supports 200+ languages and delivers frontier intelligence with industry-leading price-performance. This process runs in **AWS Fargate** containers, enabling easier scaling and management for multiple simultaneous Live Events.
4. The output of transcription and translation process is segmented by internal application, which is running in AWS Fargate, as a time synced subtitle and stored in **Amazon DynamoDB**.
5. The ABR transcode, including blank webVTT subtitle file, generated by **AWS Elemental MediaLive** is pushed to **AWS Elemental MediaPackage** via **Amazon Cloudfront** with **Lambda@Edge** which adds timestamps, aligning to the video, in these webVTT files.
6. Requests for media files are directed by **Amazon CloudFront** based on URL patterns to **AWS Elemental MediaPackage**.
7. Subtitle WebVTT file requests from users are directed by **Amazon CloudFront** to **AWS Lambda** via **Amazon API Gateway**.
8. **AWS Lambda** fetches the time-stamped subtitle file from **AWS Elemental MediaPackage** and then fetches the appropriate subtitles from **Amazon DynamoDB**. The function modifies the original subtitle file to insert the correct subtitles and finally returns the updated subtitle WebVTT file to the client.

*Reviewed for technical accuracy June 2, 2026*



**AWS Reference Architecture**